

## ABSTRACT OF THE DISCLOSURE

An amorphous alloy ribbon free from embrittlement and crystallization and having excellent surface conditions and shape in edge portions is produced by (a) preparing an alloy melt having a composition comprising 13 atomic % or less of B and 15 atomic % or less of at least one selected from the group consisting of transition elements of Groups 4A, 5A and 6A, the balance being substantially Fe; (b) ejecting the alloy melt at a temperature from the melting point of the alloy + 50°C to the melting point of the alloy + 250°C through a nozzle onto the cooling roll rotating at a peripheral speed of 35 m/second or less, a distance between a tip end of the nozzle and the cooling roll being 200  $\mu\text{m}$  or less; (c) starting to supply a gas based on  $\text{CO}_2$  to the alloy melt after the surface temperature of the cooling roll has become substantially constant; and (d) grinding the cooling roll while supplying the gas based on  $\text{CO}_2$ .